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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,684	07/15/2003	Stephen B. Alexander	10.0116.CIP.DIV.B	5522
22474	7590	08/23/2007		
CLEMENTS WALKER 1901 ROXBOROUGH ROAD SUITE 300 CHARLOTTE, NC 28211			EXAMINER SEDIGHIAN, REZA	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 08/23/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/618,684	<b>Applicant(s)</b> ALEXANDER ET AL.	
	<b>Examiner</b> M. R. Sedighian	<b>Art Unit</b> 2613	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/15/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/29/07, 8/24/05, 7/15/03</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. This communication is responsive to applicant's amendments and remarks of 6/28/07, and the preliminary amendments of 7/15/03. By the preliminary amendments of 7/15/03, claims 1-19 are canceled, and new claims 20-27 are added. Accordingly, claims 20-27 are now pending. Claims 20-27 are now examined.
2. The "Other Documents" and "Foreign Patent Documents" listed on the IDS of 7/15/03 are not considered, since such documents are not provided.

#### Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 20, 22, 25, and 26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 5,504,609. Although the conflicting claims are not identical, they are not patentably distinct from each other because both

application claim an optical communication system that is comprised of a plurality of optical remodulators, each being configured to receive a respective one of a first plurality of optical signals and output a respective one of a second plurality of optical signals in response to a corresponding one of the first plurality of optical signals, each of the second plurality of optical signals being at a respective one of a plurality of wavelengths, and an optical combiner to receive the second plurality of optical signals and supply the optical signals to an optical communication path.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20, 23-24, and 26, are rejected under 35 U.S.C. 103(a) as being unpatentable over Haas et al. (US Patent NO: 4,677,618) in view of Chraplyvy et al. (US Patent NO: 5,587,830).

Regarding claim 20, Haas teaches an optical communication device (col. 3, lines 61-68, col. 4, lines 1-4 and fig. 2), comprising: a plurality of optical modulators (24A, 24B, 24C, fig. 2 and 34, fig. 3), each being configured to receive a respective one of a first plurality of optical signals ( $\lambda_1, \lambda_2, \lambda_3, \lambda_4$ , fig. 2), and output a respective one of a second plurality of optical signals (the output signal of respective optical modulator 34 in response to laser sources 32) in response to a corresponding one of said first plurality of optical signals (34, 38, fig. 3, the output of respective optical modulators 34), each of said second plurality of optical signals being at a respective one of a plurality of wavelengths (col. 4, lines 12-20); and an optical combiner (26,

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fig. 2) configured to receive the second plurality of optical signals and supply the optical signals to an optical communication path (16, fig. 2). Haas differs from the claimed invention in that Haas does not specifically disclose the plurality of optical signals are spectrally spaced from one another by substantially 0.8 nm. Chraplyvy discloses an optical transmission system (10, 11, 12, 13, fig. 1) for transmitting optical signals that are spectrally spaced from one another by substantially 0.8 nm (col. 4, lines 20-26). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical transmission system which can generate optical signals that are spectrally spaced at 0.8 nm such as the one of Chraplyvy, for the optical signal transmission system of Haas to provide a frequency stabilized optical transmission system with a high capacity.

Regarding claim 23-24, Haas further discloses a plurality of fiber Bragg gratings, or filters (28, 18, fig. 2), each of which being coupled to the optical communication path (16, fig. 2), each of the plurality of fiber Bragg gratings, or filters being configured to select a corresponding one of the second plurality of optical signals (col. 3, lines 54-57, col. 4, lines 3-10).

Regarding claim 26, Haas further discloses a plurality of transmitters (24A, 24B, 24C, fig. 2), each of which being configured to supply a corresponding one of the first plurality of optical signals ( $\lambda_1$ ,  $\lambda_2$ ,  $\lambda_3$ , fig. 2) to a respective one of the plurality of optical remodulators (34, fig. 3, the respective modulators 34 of each respective laser 32).

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haas et al. (US Patent NO: 4,677,618) in view of Chraplyvy et al. (US Patent NO: 5,587,830) and in further view of Shimokawa et al. (US Patent No: 4,973,953).

Regarding claim 21, the modified optical transmission system of Haas and Chraplyvy differs from the claimed invention in that Haas and Chraplyvy do not disclose one of the plurality of optical remodulators includes an electro-optical converter, and an encoder circuit, wherein the electro-optical converter being configured to sense one of the plurality of first optical signals, and generate an electrical signal in response thereto, and wherein electrical signal being supplied to the encoder circuit, and one of the second plurality of optical signals being generated in response to an output of the encoder circuit. Optical remodulators with an optical to electrical converter and an encoder for encoding the information on the optical signal is well known. For example, Shimokawa teaches an optical data transmission system (col. 2, lines 52-53, col. 3, lines 10-22 and fig. 2) that uses a modulator (col. 3, lines 39-40 and 34, fig. 8) having an optical to electrical converter (O/E, fig. 8), an encoder (ENC, fig. 8), and an electrical to optical converter (E/O, fig. 8) for transmitting data signals (col. 3, lines 24-43). As it is taught by Shimokawa, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical modulator with optical to electrical converter, an encoder, and an electrical to optical converter, for the electro-optical modulator of Haas to encode and transmit different data signals optically.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haas et al. (US Patent NO: 4,677,618) in view of Chraplyvy et al. (US Patent NO: 5,587,830) and in further view of Giles (US Patent No: 5,633,741).

Regarding claim 25, the modified optical transmission system of Haas and Chraplyvy differs from the claimed invention in that Haas and Chraplyvy do not disclose an optical amplifier coupled to the optical communication path, wherein the optical amplifier having first and second stages. However, incorporating an optical amplifier along the transmission path of optical signals to boost the signal strength is well known. For example, Giles teaches an optical transmission and modulation system (80, fig. 8) with an optical amplifier (81, fig. 8) along the transmission path to amplify the transmitted signals (col. 7, lines 3-5), wherein the optical amplifier (81, fig. 8) having first and second stages (optical amplifier 81 has an input stage and an output stage). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical amplifier such as the one of Giles along the transmission path of the optical signals in the transmission system of Haas modified by Chraplyvy to boost the signal strength to further increase the transmission distance.

9. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haas et al. (US Patent NO: 4,677,618) in view of Chraplyvy et al. (US Patent NO: 5,587,830) and in further view of Froberg et al. (US Patent No: 5,625,722).

Regarding claim 27, the modified optical transmission system of Haas and Chraplyvy differs from the claimed invention in that Haas and Chraplyvy do not disclose a plurality of encoder circuits, each of which being provided in a respective one of the plurality of optical

remodulators. Froberg discloses an optical transmission system (10, 12, fig. 1) with an optical modulator (16, fig. 1) and encoder (24, fig. 1). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical modulator with an encoder such as the one of Froberg for the respective electro-optical modulators in the transmission system of Hass to encode and transmit different data signals.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**M. R. SEDIGHIAN**  
**PRIMARY EXAMINER**